

DEC 17 2007Customer No.: 31561
Docket No.: 10731-US-PA
Application No.: 10/708,801**REMARKS****Present Status of Patent Application**

The Office Action has objected the specification and claim 1 for informalities. Claims 5, 9 and 24-28 were rejected under 35 U.S.C. 112, second paragraph for being indefinite. Claims 1-10, 12-15 and 18-32 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kolb et al. (US Patent No. 6,376,590) in view of Osaka et al. (US Patent No. 5,234,870). Claims 5, 11 and 16-17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Obitsu et al. (US Patent No. 5,223,176) in view of Kato (US Patent No. 4,784,794).

Claims 5, 9, 12, 28 and 30 have been amended to correct informalities or to provide more descriptions for clarification purposes, while claims 1-4, 14, 16 and 24-27 have been cancelled. It is believed that no new matters have been added by amending the claims and specification. Entry of these amendments is gratefully requested. After considering the following remarks, reconsideration and withdrawal of these rejections are respectfully requested.

Discussion of objections for the specification and claims

Claim 1 was objected for informalities. The specification was objected for informalities.

Applicant would like to thank the Examiner for carefully reviewing the specification. The specification has been carefully amended to correct informalities, as

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suggested by the Office Action, while claims 1-4 have been cancelled. Applicants respectfully pointed out that quite a few informalities occurred in the specification or claims due to the unforeseen software errors during electronic filing procedure.

Upon the amendments, withdrawal of these objections is respectfully requested.

Discussion for the 112 rejections

Claims 5, 9 and 24-28 were rejected under 35 U.S.C. 112, second paragraph for being indefinite. Especially, the Office Action considered the terms "conditioning", "acid mud", "dosing speeds" and "organic dispersing agent" used in claims were unknown.

Accordingly, claims 5, 9 and 28 have been amended, especially amending the terms "conditioning" as --adjusting the pH of--, "acid mud" as --acidic slurry--, "dosing speeds" as --addition rate--, and "organic dispersing agent" as --organic dispersant--. The corresponding contexts in the specification have been amended accordingly. Claims 24-27 have been cancelled. Moreover, translational errors have been corrected. Entry of these amendments is earnestly requested.

Figure 1 has been amended accordingly. Entry of these amendments is earnestly requested. Formal replacement sheet of figure 1 has been submitted in compliance with 37 CFR 1.121(d).

Response to Claim Rejections under 35 U.S.C. 103

Claims 1-10, 12-15 and 18-32 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kolb et al. (US Patent No. 6,376,590) in view of Osaka et al. (US

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Patent No. 5,234,870). Claims 5, 11 and 16-17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Obitsu et al. (US Patent No. 5,223,176) in view of Kato (US Patent No. 4,784,794).

Claims 1-4, 14, 16 and 24-27 have been cancelled. Claim 5 has been amended to provide more detailed descriptions according to the present invention and to merge limitations from claims 14, 16 and 26-27.

Amended claim 5 recites:

5. A method of preparing a zirconia sol, comprising:

providing a first solution containing an inorganic zirconium salt and an organic acid therein, wherein the organic acid is propionic acid, acrylic acid, or methacrylic acid;

mixing the first solution with a buffer solution containing an organic amine therein for obtaining a sol, wherein the organic amine is trimethanolamine, triethanolamine or tripropanolamine;

heating the sol to obtain a product;

adjusting the pH of the product to form an acidic slurry, wherein the acidic slurry has a pH value less than 3; and

adjusting the pH of the acidic slurry to form a neutral zirconia sol having a pH value between 5~10.

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Kolb discloses a zirconia sol prepared by hydrolyzing the aqueous solution of the polyether acid zirconium salt. The aqueous solution of the polyether acid zirconium salt is prepared by reacting a zirconium salt with a polyether carboxylic acid.

However, as emphasized by Kolb as the unworkable compounds for Kolb's preparation method, "In fact, even the addition of small acids such as propionic acid and acrylic acid cause the salt to be insoluble in water." (col. 7, lines 13-15).

On the other hand, the method as claimed in the present invention employs "a first solution containing an inorganic zirconium salt and an organic acid therein, wherein the organic acid is propionic acid, acrylic acid, or methacrylic acid", and thus is very different to the preparation method of Kolb.

As admitted by the Office Action, Kolb fails to teach or suggest using an organic amine. In fact, Kolb's method is very different from the method of this invention as Kolb's method using different starting materials, different reactants under higher hydrolysis temperatures and high pressure autoclave. Even considering the teachings of Osaka, Osaka fails to remedy the deficiencies of Kolb and neither reference discloses the use of the organic amine.

Therefore, Kolb fails to disclose all the features as recited in amended independent claim 5, and independent claim 5 patently defines over the reference Kolb. Even considering the teachings of Osaka, the combinations of Kolb and Osaka still fails to arrive at the present invention as recited in the independent claim 5.

Regarding the reference Obitsu, it merely discloses adding citric acid to an acidic zirconia sol and adjusting the sol to be in basic pH values by adding a basic compound.

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However, when compared with the method of this invention, it is clear that dissimilar starting materials are used by Obitsu, and very different process steps are employed according to Obitsu's process. In addition to Obitsu's missing features "a heating treatment, and the dried soldissolved in a polar solvent" as admitted by the Office Action, Obitsu also fails to teach or suggest the use of organic acid or the use of organic amine as recited in amended claim 5.

Therefore, Obitsu fails to disclose all the features as recited in amended independent claim 5, and independent claim 5 patently defines over the reference Obitsu. Even considering the teachings of the reference Kato, the combinations of Obitsu and Kato still fails to arrive at the present invention as recited in the independent claim 5.

Hence, independent claim 5 patently defines over the above-discussed references, either alone or in combination. Claims depending from claim 5 are allowable for at least the reasons stated with regard to their respective base claim 5.

Accordingly, reconsideration and withdrawal of these rejections under 35 USC 103(a) are respectfully requested.

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CONCLUSION

For at least the foregoing reasons, it is believed that all the pending claims of the present application patently define over the prior art and are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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Respectfully submitted,


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